

KERAMIC STUDIO

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OME time ago we asked in our editorial columns for an expression of the ideas of our subscribers on the subject of an added department of water colors and oils. If we decide to issue this new publication, which would be uniform with KERAMIC STUDIO in size of page and cover, the first number will be October, 1908. And, although many points are not yet decided, it is very likely that the Crafts Department will be included in the new publication, thus leaving more room in KERAMIC STUDIO for exclusive china and pottery instruction.

There would be, besides the Crafts, reproductions of subjects suitable for execution in oil and water color, one of them given in color as a supplement, all accompanied with technical treatments and with instructive articles on water color or oil painting, drawing, etc.

The subscription price cannot be determined yet, but a special price would be made to subscribers who wish to have both KERAMIC STUDIO and the new publication.

Any suggestions by our readers in regard to the new venture will be welcome.

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A new department is to be added to KERAMIC STUDIO. We have not quite settled what we shall call it. One of our foremost decorators who has great sympathy for the struggles of beginners and those who must make a living of their art, has expressed herself as willing to give us monthly helpful talks on any and all subjects which come up in the daily routine of ceramic work. All who have vexed questions in relation to their work may address them to KERAMIC STUDIO with full assurance that they will be fully and sympathetically answered in these talks. Let us hear from those who need help soon, as we expect to begin these talks in an early issue.

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We have a number of special features planned for the coming year. Among these several will be of special interest to lovers of flowers. An early issue will be devoted to "Wild flowers of Texas," from the brush of Alice Willitts, of Cincinnati, a former decorator at the Rookwood pottery. These are executed in a semi-naturalistic manner which we are sure will please both schools of decorative art. Another number which will be helpful to both naturalistic and conventional workers, will be entitled "In a New England Garden." This from the brush of Sara Wood Safford, of New York. We have other good things in store which we will announce later.

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Casting about for a subject of timely interest, the editor appealed to a member of the staff for a helpful suggestion. The answer was a jocular allusion to the editor's absorption, these past few weeks, in the pages of the plant and seed catalogues of various nurserymen. After all, why not? Now while the snow covers the ground and the thermo-

meter wavers between zero and "way below" is by way of contrast the season of all seasons when our attention should be distracted to the glory that is to be in our gardens, and as for suggestions! these catalogues are full of them, flowers, whose description brings to our minds forgotten friends, or new ones; subjects for design or color suggestions. Why have we not thought before what useful material they would make. Let us begin alphabetically.

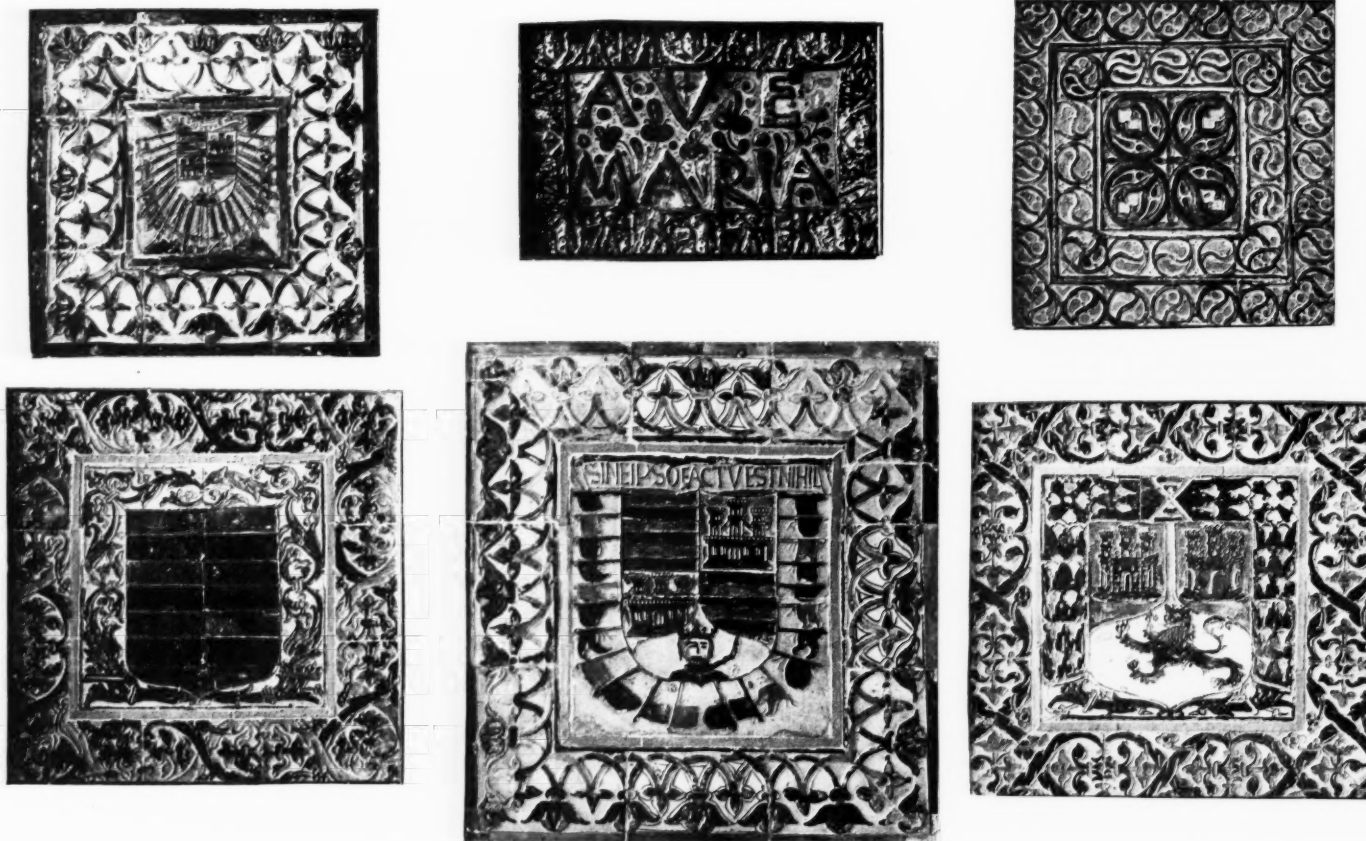
Anemones, of all kinds, for both Spring and Fall, so wonderfully decorative. Antirrhinum (snap-dragon) with its tall spikes of magnificent blossoms in every conceivable color combination from white through yellow to pink and crimson. Aquilgia (Columbine), white, blue, yellow, pink, red and purple. And all these new strains of our old familiar friends are so much larger and more varied in coloring than ever before. Aristolochia (Dutchman's Pipe), Asters, which grow yearly more like the Japanese chrysanthemums. Here is one seedsman's catalogue with such a beautiful picture on its cover that we must surely spend our pennies to have this to study. A large branching aster with long curled petals twisted in and out and striped in such a dainty violet and white effect.

Bachelor's Button, the real blue Kaiser Wilhelm; why do we not use it more? Bellis Perennis, the English Daisy, that sounds full of possibilities. Calliopsis, yellow and maroon in great variety, we need yellow to reflect the sunlight. Campanula, Canterbury Bells, The Blue Bell of Scotland and Chinese Bell flower. Blues are so restful and the Bell-flower especially so dainty and graceful. Carnations, so many new colors and the ragged edges are so attractive. Clematis, especially the fine white paniculata is so dainty and refreshing. Cosmos, Cowslip, Cyclamen, Dahlia, Digitalis (Foxglove). We must hurry through the list or our space will give out. Indeed, we must skip half the letters of the alphabet. Gentian, another rare blue. Heliotrope, white lilac, and purple. Hollyhock, single and double, all shades but blue. Iris, German and Japanese. We must surely have these. Larkspur, the most beautiful blues of all, and such gorgeous tall spikes. "Love lies Bleeding," "Love in the Mist," Marigold, Mignonette, Monkshood, Morning Glory, Nasturtium, Nicotina, Oxalis, Peonies, Pansy, Phlox, Primrose, Poppy, Roses, Salvia, Spirea, Stokesia, Sweet Peas, Verbena, Violet, Zinnia. Dear me! dear me! no more space and we have not named half and there are the Daffy-down-dillies, the Narcissus and Tulips, the Hyacinths and Lilies of the Valley that we almost overlooked. Who says it is wasting time to study seed catalogues in mid-winter. It is time now to start our seeds in the house and hot bed to give us material for summer delight. All hail to the seedsman's catalogues in February.

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SHOP NOTES

We have just received a new catalogue of Air Brushes and Air Brush materials from F. Weber & Co. The use of air brushes and mechanical sprayers by designers, potters, etc., is becoming quite general, and this catalogue will undoubtedly be of interest to many of our subscribers.



Hispano-Moresque Tiles in the Metropolitan Museum. By courtesy of the Museum.

METALLIC DEPOSITS ON GLAZES

Louis Franchet

FROM tradition and from rare manuscripts, we learn that ten centuries ago, at a time when the application of metals over enamels was unknown, ancient potters obtained by reduction deposits of copper and silver on the glaze which covered their wares. Modern ceramists have attempted to imitate these lustres by simpler methods, in the oxidizing atmosphere of their mufles, but the results have been disappointing and have only made the question of glazes and glasses with iridescent reflections still more confused.

The uncertainty which has always existed in regard to these metallic deposits is due to the fact that those obtained by reduction have been considered similar to those obtained in an oxidizing atmosphere. They are two entirely different kinds of deposit, however, and the difference in their properties enables us to establish a marked distinction between them.

The time of the discovery of metallic deposits over a vitrified substance is uncertain; it seems to date back from the foundation of the first potteries established by the Arabs in the East about the period of their great conquests. The oldest examples of faience covered with iridescent enamels date from about the IX. century and are claimed by Orientalists to be of Arabian manufacture. Persia has transmitted to us some remarkable iridescent pieces, but none seems to be anterior to the Mussulman invasion, and all bear the characteristics of Arabic art.

It is only at the beginning of the XIV. century that this manufacture developed to any extent, when the Moors, according to Baron Davillier¹ established in Malaga their first faience factories; the iridescent wares were then, under

the name of *golden ware*,² exported all over the world, and potteries multiplied in Spain. This fabrication was prosperous until the end of the XV. century, when Ferdinand V., king of Aragon, delivered the peninsula from Mussulman domination and it disappeared almost entirely when in 1610 Phillip III expelled the Moors who were still residing in Spanish provinces. Spain, however, has never entirely ceased producing faience with metallic reflections, but the few potters who have succeeded to the Moors have never given to their manufacture the importance which it had under the Mussulmans.

In the XV. century, Italy, which had always been an important market for the *golden ware* of Spain, undertook its production. This attempt would probably have failed if a Sienna potter, Galgano di Belforte, had not gone to Valencia and succeeded in obtaining the secret of the Moresque process. The Italians even improved upon this process, and Giorgio Andreoli has left us majolicas with metallic deposits, the splendor of which has never been surpassed.

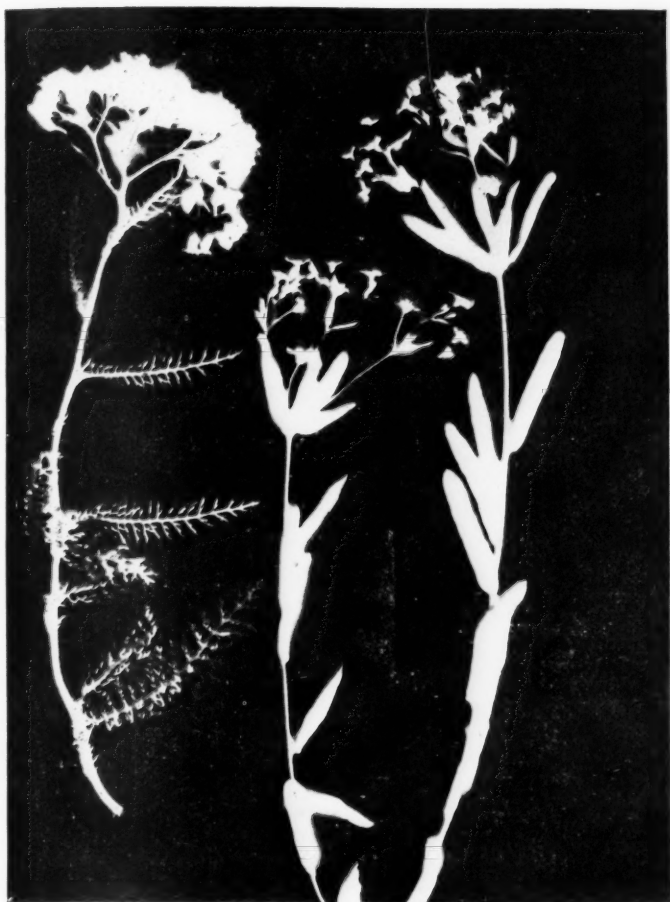
France also had once factories of iridescent wares; one in Narbonne, about which little is recorded, and one in Poitiers much better known.³ At the end of the XIV. century, the Duke of Berry secured from Valencia a Moorish potter, and established in Poitiers kilns and the necessary installation for the manufacture of ceramic tiles with metallic iridescence.

In 1882, an Italian potter introduced among the potteries of Golfe Juan and Vallauris the use of a decoration with metallic deposits. The method there employed, which we will study later on, is the same which was used in the Middle Ages, and the same tradition is observed by

1. Davillier—Histoire des Faïences Hispano-Mauresques à reflets métalliques, Paris, 1861.

2. In Spanish, *obra dorada*, in French, *oeuvres dorées*.

3. L. Magne—Le Palais de Justice de Poitiers, Carreaux émaillés du XV.ème Siècle (La Céramique, T. VII, p. 157).



YARROW OR WILD PINK. BLUE PRINTS BY MARY J. COULTER



WILD GRAPE LEAF AND TENDRILS. BLUE PRINTS BY MARY J. COULTER

the many artisans who during late years have left Golfe Juan and Vallauris to practice their trade in Marseille, Paris, Aubusson, Limoges, etc.

PREPARATION OF MATERIALS

For several centuries the process for obtaining metallic deposits on the glaze was transmitted in Spain by tradition only. But, in Italy, in 1548, a ceramic painter, Piccolpasso, wrote, giving a very exact description of the method in use in all Italian potteries.¹

Besides this, in 1785, in answer to an official request the alcaid of the city of Manises, the great center of Hispano-Moresque ceramic fabrication, sent to Madrid the old Arabic recipe. The manuscript was published only in 1877 by Don Juan F. Riano.²

The following are the directions given by the alcaid Manuel Martinez de Frugo:

"First firing—Biscuit.

"Second firing—Glazing.

"The pieces, after being made, fired and glazed with a stanniferous enamel, are submitted to a third firing to obtain the golden effect.

"Five ingredients form the composition of the golden matter, these are:

Copper, the older the better.

Silver, about which the same remark may be made.

Sulphur.

Red ochre mixed with clay, called here *almagra*.

Strong vinegar.

"The mixture of these ingredients is made in the following proportions: Copper, 3 ounces; Silver, a small piece; Sulphur, 3 ounces; Ochre, 12 ounces; Vinegar, 1 azumbre (3½ pints.)

"To this mixture is added three pounds twelve ounces of the scoria which is scrubbed off the ware after the firing of the golden color, the ware being at that time washed in a basin full of water in which the scoria is deposited.

"Here is how the combination of these ingredients is made: a little ground sulphur is placed in a metal spoon with two small pieces of copper and between them a small piece of silver; then it is covered with sulphur and copper. The spoon is placed on a fire and left there for a thorough combustion of the sulphur, which is completed when the flame naturally dies out.

"When the material contained in the spoon has cooled off, it is carefully ground; then the ochre and scoria are thoroughly mixed by hand, and the whole is again ground to the consistency of a fine powder which is placed in a basin. Water is added so as to form a paste which will adhere to the sides of the basin, and it is fixed there with a trowel, one being careful not to leave any paste at the bottom of the dish. Of course in order to obtain this result, the water must be added gradually until the paste is of the proper consistency.

"After being thus prepared the basin is placed in the kiln during six hours, and in Manises this is done at the time of the first firing of the ware. The contents of the basin are scrubbed off with a piece of iron and crushed in a mortar, then placed in a hand mill with the vinegar which so far has not been used. The whole is ground during a

couple of hours and the result is the golden color ready for the decoration of the ware (Valencia, February 18, 1785)."

So far as the preparation of the golden color is concerned, the manuscript of Manuel Martinez de Frugo thus gives us very thorough instructions; but, although it mentions the third firing, which is the reducing firing, it does not say how this firing was done. Fortunately this important information, as we will see later on, is found in the accounts of the Moresque manufacture established in Poitiers by the Duke of Berry.

The manuscript published in 1548 by Piccolpasso, also gives, in addition to formulas, the method of firing which is required for the production of metallic deposits. This is worth considering, as the Italians had obtained the process from the Moors. The French translation of Piccolpasso's work by C. Popelyn being incomplete, I have consulted Passeri who in 1758 compiled from it a small treatise.¹ Unfortunately this treatise is full of erroneous conclusions and discrimination must be used when consulting it. But Passeri gives the technical details without any of his strange comments, and we find the following formulas:

	a	b
Terre rouge	3 ounces	6 ounces
Ferret d'Espagne	2 "	3 "
Bol d'Armenie	1 "	
Cinabre mineral		3 "
Argent calciné		1 "
	6 ounces	13 ounces

"Terre rouge" is red ochre which was used mixed with "Bol d'Armenie," a ferruginous clay. Passeri also mentions *red toccalapais* which is hematite. "Ferret d'Espagne" is copper sulphide. "Argent calciné" (calcined silver) is undoubtedly silver sulphide which was obtained by heating the metal with sulphur.

Translated into modern chemistry, Italian and Hispano Moresque formulas correspond to

	H. Moresque	Italian
		a b
Red ochre	71,98	66,67 49,49
Silver sulphide	1,15 1,03
Copper sulphide	26,87	33,33 24,74
Cinnabar 24,74

It will be noticed that the Moresque formula and the Italian formula *b* contain very much the same proportions of copper and silver sulphides which are the active factors in the formation of metallic deposits. But for a certain proportion of red ochre has been substituted in the Italian formula, cinnabar or mercury sulphide which at that time was frequently introduced, and generally at random, into most chemical preparations.

In formula *a* there is no silver sulphide, only copper sulphide which is sufficient to give the ruby red metallic deposits. This is very likely the famous secret of Giorgio Andreoli, who, according to J. Marryat, had obtained it from another artist who had preceded him in Gubbio.

In Moresque faiences, the red which decorated the Giorgio ware is never found, because with copper sulphide they used silver sulphide which produces yellow tones.

Brongniart was evidently unfamiliar with these old formulas published by Passeri one century before his time, as, when he experimented on the production of metallic

1. C. Piccolpasso—*Li tre libri dell'arte del Vasaio*, 1548. Manuscript in the South Kensington Library.

2. Don Juan F. Riano—*Sobre la manera de fabricar la antiqua loza dorada de Manises*, Madrid, 1877. This pamphlet cannot be found to-day but an English translation was published in 1879 by the South Kensington Museum. I owe much useful information on this subject to Mr. L. Solon, of Stoke on Trent, whose ceramic library is one of the most complete in the world. (L. F.)

1. G. Passeri—*Istoria della pitture in maiolica fatte in Pesaro e ne luoghi circonvicini dell'abate Gaimbatista*. 1st Ed. Venice, 1758. 2d Ed. Bologna, 1775. 3d Ed. Pesaro, 1838; translated into French by H. Delange, Paris, 1853.



GRAPES—HENRIETTA BARCLAY PAIST (See Treatment Ceramic Studio, January 1907)

deposits, he simply used copper oxide in a muffle containing faience heated to a red heat.

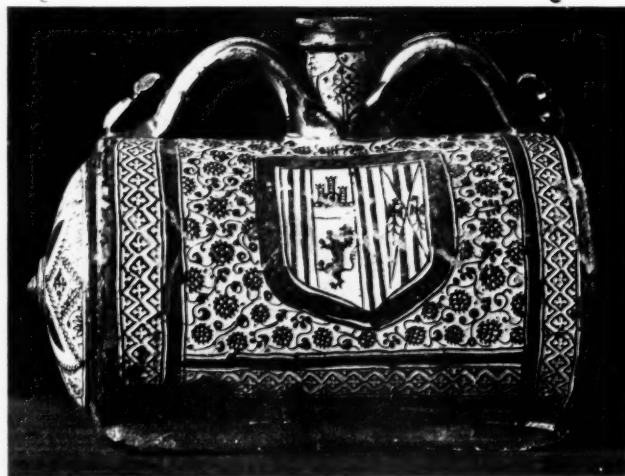
I have tried the old processes by following strictly the instructions which accompany them, and I have obtained deposits absolutely identical to those found on Renaissance faience. I have also sought to determine the blue and green tones which are found there occasionally, also the golden, yellow and brown tones which were obtained at Deruta toward 1530. My experiments convince me that the blues and greens are due to the metallic mixtures, while colors shading from golden to dark brown are due to the more or less prolonged action of reducing gases.

I have composed the following formulas:

No. 1		No. 2	
Copper carbonate	30	Copper carbonate	28
Red ochre	70	Silver carbonate	2
		Red ochre	70
No. 3		No. 4	
Silver carbonate	3	Copper oxalate	5
Subnitrate of bismuth	12	Silver carbonate	1
Red ochre	85	Subnitrate of bismuth	10
		Red ochre	84
No. 5		No. 6	
Copper sulphide	20	Copper carbonate	95
Tin protoxide	25	Silver carbonate	5
Red ochre	55		
No. 7		No. 8	
Silver sulphide	5	Copper sulphide	2
Red ochre	95	Silver sulphide	1
		Subnitrate of bismuth	17
		Red ochre	80

These different combinations were applied over enamels of various compositions vitrifying at 990° C. (Seger cone 08), then heated to 650° C. (Seger cone 020), the third firing mentioned in the Moresque process, and submitted there to an intense reduction. Formulas Nos. 1, 2 and 5 gave metallic iridescent effects similar to those obtained with the old Arabic and Italian formulas. Nos. 3, 4 and 8 gave indigo blue deposits, sometimes green with No. 3, or a mixture of blue and green with Nos. 4 and 8. No. 7 gave brilliant tones, pale yellow, golden and brown (similar to the effects obtained at Deruta), and No. 6 a brass yellow tone.

The influence of bismuth oxide is evident; its presence determines an intense blue shading into green in silver combinations, while the latter, if used alone, produce yellow or brown deposits. It is then very probable that the Italians used this metal which is mentioned for the first time by Agricola in 1529 and was considered by some authors as an



Valencian water bottle with the arms of the Duke of Segorbia, about 1450-1470. Courtesy of the Metropolitan Museum of Art.

impure silver. It is as such probably that it was tried and frequently employed later on by Francesco Xanto Avelli di Rovigo (1530-1550), the last artist who used in his studio in Urbino, the ruby red and golden effect. The violet and purple lustres on his ware show us that he had thoroughly mastered all the processes of the manufacture, even more so perhaps than Giorgio Andreoli whose fame is much greater.

The different tones obtained with silver combinations are due to the action of reducing gases, as I have studied it by modifying somewhat the Moresque process. Instead of applying the metallic mixtures over the glaze, I have incorporated them into the glaze itself, thus making the observation of phenomena much easier, because the fusing of the ochre mixture with the underlying glaze was not then to be feared, while in the ordinary process this fusing occurs every time that the temperature of the muffle is allowed to rise during reduction.

(TO BE CONTINUED)



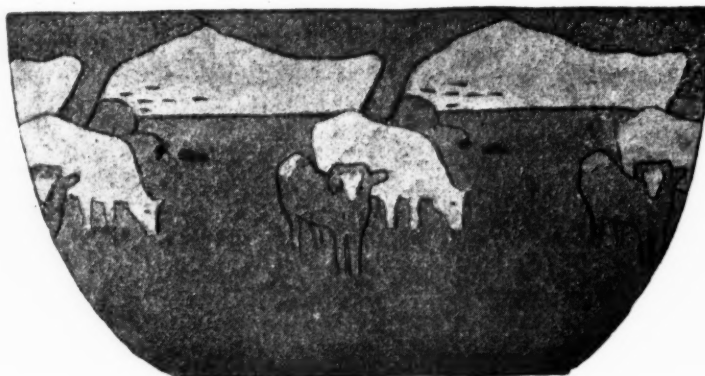
STUDIO NOTES

Mrs. Vance-Phillips is back from Los Angeles and has resumed her classes in her New York studio, 647 Madison Avenue.

Miss Laura Overly has resumed her classes in porcelain decoration in her New York studio, 27 West 26th street.



BOWL DESIGN IN BLUE GREYS—LOUISA JORDAN
OF NEWCOMB COLLEGE



BOWL DESIGN IN CAFE AU LAIT AND OLIVE GREEN
—NANCY BEYER



PLATE—MABEL C. DIBBLE

THIS is a simple design suitable for a beginner. Divide plate into sevenths. Make perfect tracing of one flower group, transfer to china laying the tracing directly on a line not between lines. Outline in Black and put gold edge on plate for first fire.

For second fire, prepare your enamels. For green leaves use Apple Green, Yellow for Mixing, Brown Green No. 6. Divide this, making part of it lighter by adding more Yellow for Mixing and darken the rest with more Brown Green and a little Brunswick Black. Then add one-fourth Aufsetzweiss to each. Make fine small leaves and calyx in the lighter and stems and larger leaves in the

darker green.

For pink flower and buds prepare mixed enamel. One-third Hancock's hard white enamel (ground down with a very little Dresden Thick Oil) and two-thirds Aufsetzweiss, thin with turpentine. Take Hancock's Carmine, grind down with Dresden oil, add one-eighth Flux, thin with turpentine. Add a little at a time to the mixed enamel until a delicate pink. Add more Pink to part of it, for the darker petals. Pistil, a light green and stamens yellowish brown. Touch up gold edge and fire. Not too hot a fire as the flux will help the pink enamel to develop with less heat.



DESIGN FOR THE DECORATION OF CHINA

Caroline Hofman

SECOND PAPER

HAVING begun to think of design as space-division, and to grasp the principles which govern it, we want, naturally, to gather the best material to use in our work. And we find nothing more valuable, nor more filled with suggestions for beautiful pattern than plant form. These we will study in the ways that make them most directly useful to our purpose.

The very first quality in plant-growth which the designer must feel and interpret is the *line*.

No matter how closely he has represented parts of the flower or leaf, if he has failed to give the structural line, the direction and attachment of flower to stem and stem to stalk, he has fallen short of the true aim and his drawing is of little value in designing. A designer who is also a very successful teacher said to me: "When I draw plants and flowers I try to fix in my mind just the way they *grow*, the characteristic line. Then I do not copy each little accident of that particular plant, but can seize the whole nature of it with a few strokes, and get the crispness and vigorous growth instead of toiling over every inch of it until both plant and drawing are limp and lifeless."

Everywhere plants give us strong yet delicate turns of line, and wonderfully graceful forms. Now if these forms are coarsened by careless or unsympathetic drawing, and then enlarged, (as they often must be,) for use in abstract design, what is left to us wherewith to "decorate" our china? Isn't it quite necessary, then, to preserve in our drawing the grace of proportion and charm of line?

Flowers! The way in which some of the best Japanese porcelain-painters used growing plants on their wares would give us modern china-painters enough to study throughout our lives. With them it was never a question of realistic arrangement, for they gave us the very spirit of nature with the soul of decorative art. But suppose that we are going to use our flower-studies in designing an abstract unit to repeat as a border or a surface-pattern. Then, quite as much, we need a careful record, in our flower-drawings, of what is most *alive* in the plant-form; for we must make our unit graceful and well proportioned even though it should be a bunchy little tree or a plump little mushroom. Whatever it be, (unless it is wholly geometrical,) it must in some way suggest and follow nature.

For our pencil-drawings we must be sure that the lead is rather soft, (the "B" grade is best) and it must be carefully sharpened to a very fine point, with enough wood cut away so that we can see constantly what the point is doing. If we can possibly do so let us draw from a growing plant. Cut flowers will do if they have been cut with a good deal of stem, and even of stalk, with them, and if they have been long enough in water to have risen firmly into their natural lines. But nothing makes a more satisfactory model than a growing plant. You may only in-

tend to draw a spray of leaves or a single flower from it, but you have nature herself, in her best mood, before you.

In the summer there are beautiful models at every turn. Some weeds are delightful when treated decoratively, and there is rich material for the designer in a flourishing vegetable garden. Scarcely a vegetable that has not a blossom of interesting form and delicate modeling, while clusters of pea-pods, and the small tomatoes with their fern-like leaves, might fill whole pages of our sketch-books and be worked into innumerable designs.

You remember the border in one of Ghiberti's doors, where he has used an egg-plant in such a beautiful way.

Whatever model we have chosen for this exercise, let us come to it with no previous notions as to how it *ought* to look, give no thought to the ways in which other people have seen it. It will tell us its story in its own way if we look at it with open mind and loving heart.

First let us draw the main lines of growth, to give us the action and construction of the model, as well as the placing of the drawing upon the paper.

Upon the feeling in these first lines all the success of our drawing depends; so, if our first attempt looks heavy or limp let us throw it aside and begin again. We shall make all the better progress for this slight sacrifice.

Having now drawn lines that express the growth, let us construct the rest of the drawing with relation to them, —in outline only,—keeping the pencil very sharp and not indicating any shadows. The perspective is sufficiently



shown by a careful outline. Where, however, one part of the flower or leaf laps over another, we can strengthen and darken the outline; and the same where we want to indicate any part of the plant coming toward us. This management of outline, used skillfully, will give a surprising amount of movement, and even of atmosphere, to our drawing.

We use a sharp point because it enables us better to study nature's way of putting graceful forms together, and to learn how her fine curves, be they great or small, spring crisply one from another, giving a feeling of unity and strength to the whole growth, however light and delicate it may be.

Now, putting our pencil drawing by, let us try to interpret a part of the same plant with a brush and ink (India ink).

Again we must keep in mind the structural line which holds the entire plant, stem, leaf and flower together, and with our brush we will try with clear crisp touches to interpret the different forms.

The brush drawings that are among our illustrations will give you a better idea of the way to do this than words can. Do not hesitate to try the same thing several times, altering the dark and light until you find how you can best



express just what this plant means to you.

Now having Nature's lines and curves and forms freshly in mind, let us use something from one of our drawings as a motive for a little design. Our practice in proportion and spacing, in the first exercise, and our interpretation of plant-forms in this one are to be combined.

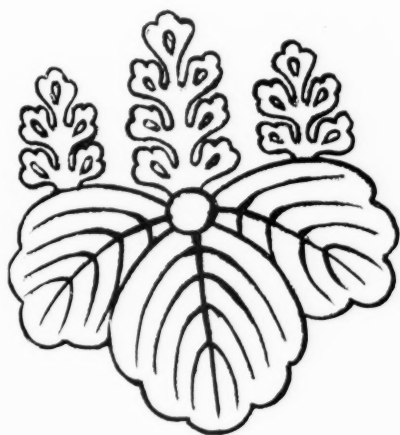
Perhaps we will use a very much simplified flower from our drawing, perhaps only a leaf, but we will study how best to space it in a little seal, in the same spirit of decoration as that of the seals and crests among the illustrations. It could be used inside a small bowl, or on a hatpin, or in various other ways that will occur to you. A nicely designed seal is an ornament that always makes the article it decorates seem especially one's own.

Although our design is not a large one it gives us every opportunity to use our principles; the shape of it, to begin with, must be good, the space must be planned to give us principal and subordinate shapes of both dark and light, and we must have only one main interest, that is, one part of it must attract the eye more than any other.

You will notice how well the spaces in the corners of the Byzantine panel comply with these principles, and how the Japanese have followed the same laws in designing the crests and seals.

Compare all the compositions and designs which have thus far been given in these articles, and you will find that they all follow the same general rules.

(TO BE CONTINUED)



ARBUTUS (SUPPLEMENT)

Maud E. Hulbert

ROSE (or Pompadour 23), Lemon Yellow, Yellow Ochre Chestnut Brown, Copenhagen Grey, Warm Grey, Deep Blue Green, Yellow Green, Moss Green J, Brown Green.

Paint the buds and outside of the flowers with Rose (or Pompadour) for the first firing and the insides with a thin wash of Brown Green, in some a very little Ochre or a little Copenhagen Grey, in the very centers a touch of Lemon Yellow and Brown Green, and in some Chestnut. Use the Moss Green and Yellow Green for the lighter leaves and Brown Green and Chestnut for the darker ones.

For the stems use Chestnut and a very little Pompadour. Use Deep Blue Green, Warm Grey, Copenhagen Grey and Ochre in the background.

Do not mix the colors on the palette with a knife but wash one into or over another. If possible avoid using the

Rose in the second firing but shade with light washes of Lemon Yellow or Brown Green. Do not use Warm Grey with Rose but if the Pompadour is used in place of Rose, the Warm Grey should be used with it.

WATER COLORS

Carminé, Lemon Yellow, Roman Ochre, Hooker's Green 1 and 2, Olive Green, Sap Green, New Blue, Burnt Sienna.

To keep the colors clear and to get good greys in water colors avoid mixing the colors on the palette by rubbing one color into another, but take the two or three colors to be used into the brush without mixing. For instance the background is New Blue, Carminé and Roman Ochre (or Brown Pink) and one can easily see by a little experiment that a muddy grey is obtained by mixing and a clear one by taking the colors into the brush separately. Use rather a heavy paper and if possible a large sable brush.



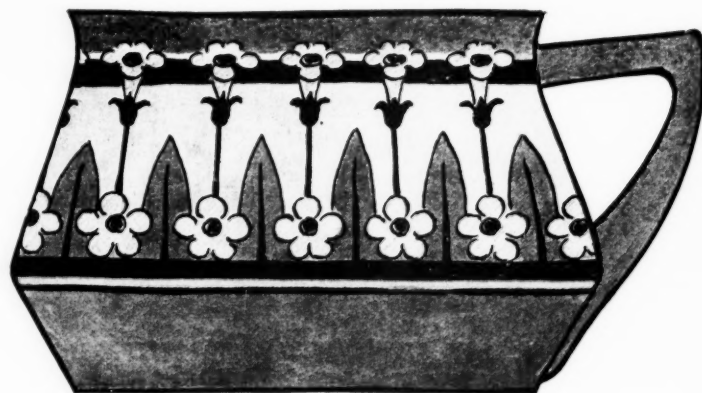
CUP AND SAUCER—IDA C. FAILING

BLACK—Duck Green or Shading Green. White—Palma Rosa Salmon (Fry). Halftone—Duck or Shading Green lighter than black bands or Olive Green.

Flowers—Russian Green. Flower centers—Yellow Brown.

2. Reverse, have flowers Pink, background Blue with Olive or Brown Green bands. Last fire, wash of Ivory Glaze or Chinese Yellow, thin.

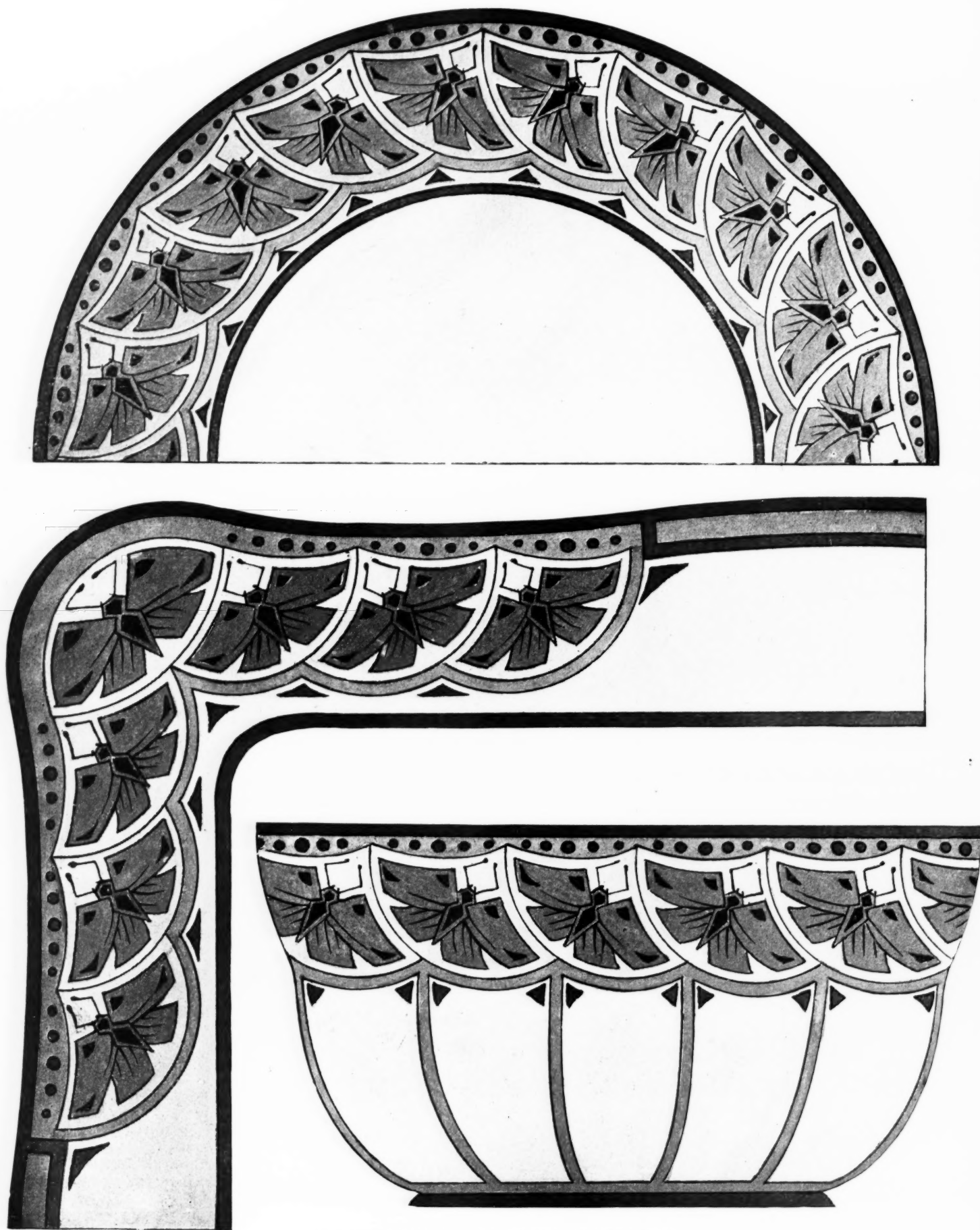
3. Yellow Brown lustre background. Pale Blue flowers. Gold, leaves and outside band. Black or very dark blue, dark bands. Black or dark blue for markings, outline and stems.





TEN WEEKS STOCK—I. M. FERRIS

Soft blues and greys are best for this study with a touch of Yellow in the heart of both the white and purple flowers. The most prominent ones are White shaded with Dark Yellow and Brown Green. For the purple ones use Violet and Banding Blue. Leaves, a soft Grey Green.



PLATE, BORDER AND BOWL—ROSEDALE*

Darkest tone and outline, black. Medium dark tone, dark grey blue. Medium light tone, light grey blue.
 Lightest tone, ivory.

*This design was sent in competition under the name of Rosedale, but the name of designer was lost.



TREE DESIGN FOR PLATE OR TRAY—A. L. B. CHENEY

DIVIDE the plate or tray. Trace design on and outline in India ink. Paint background of tree and portion between circle and border with Copenhagen blue. Dry well and dust Copenhagen blue over this. Dark portions of border painted with Fry's Special Oil, colored with very little Copenhagen. This must be applied smoothly and not padded; let stand an hour and dust with Copenhagen blue;

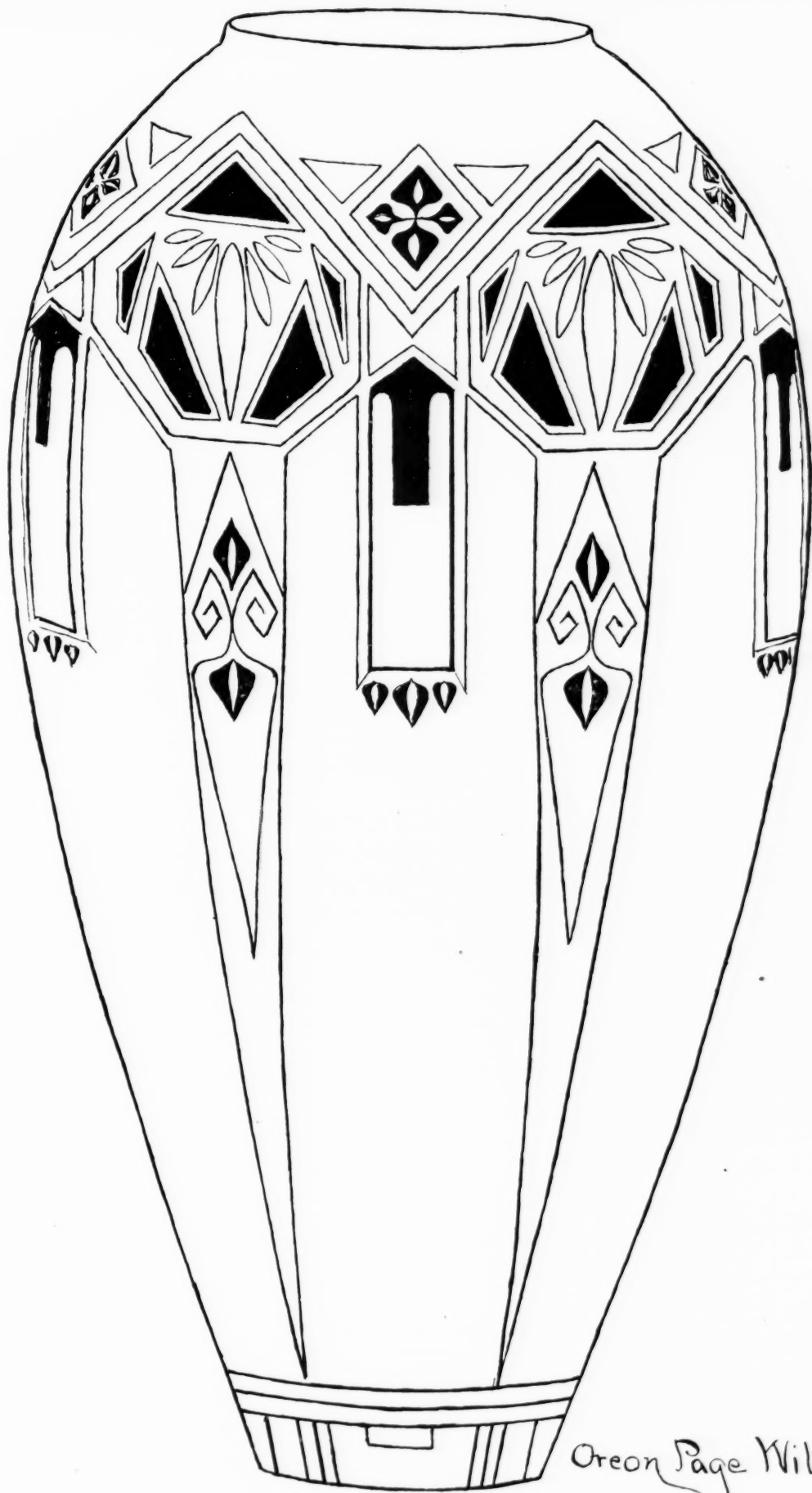
clean out and fire.

Second fire. Paint over all the Blue with oil, pad, let stand for an hour, then dust with Copenhagen blue.

Third fire. Apply special oil for tinting mixed with a trifle of Pearl Grey to the foliage and band enclosing tree, grass, etc., and dust with Pearl Grey; Grey-yellow for light portion of border.



HAWTHORNS AND ROSE HAWS—EDITH ALMA ROSS



Oreon Page Wilson.

VASE OR STEIN—OREON P. WILSON

A Conventional flower design to be used as a repeat pattern on either vase or stein, leaves and stems green, flowers light blue.



WILD ROSES—BLANCHE VAN COURT SCHNEIDER

WILD OR SINGLE ROSES*

Anne Seymour Mundy

FIRST Fire: Paint design in flat with Ashes of Roses, Purple Black and Grey for Flesh. Do not get any Purple Black on the high lights.

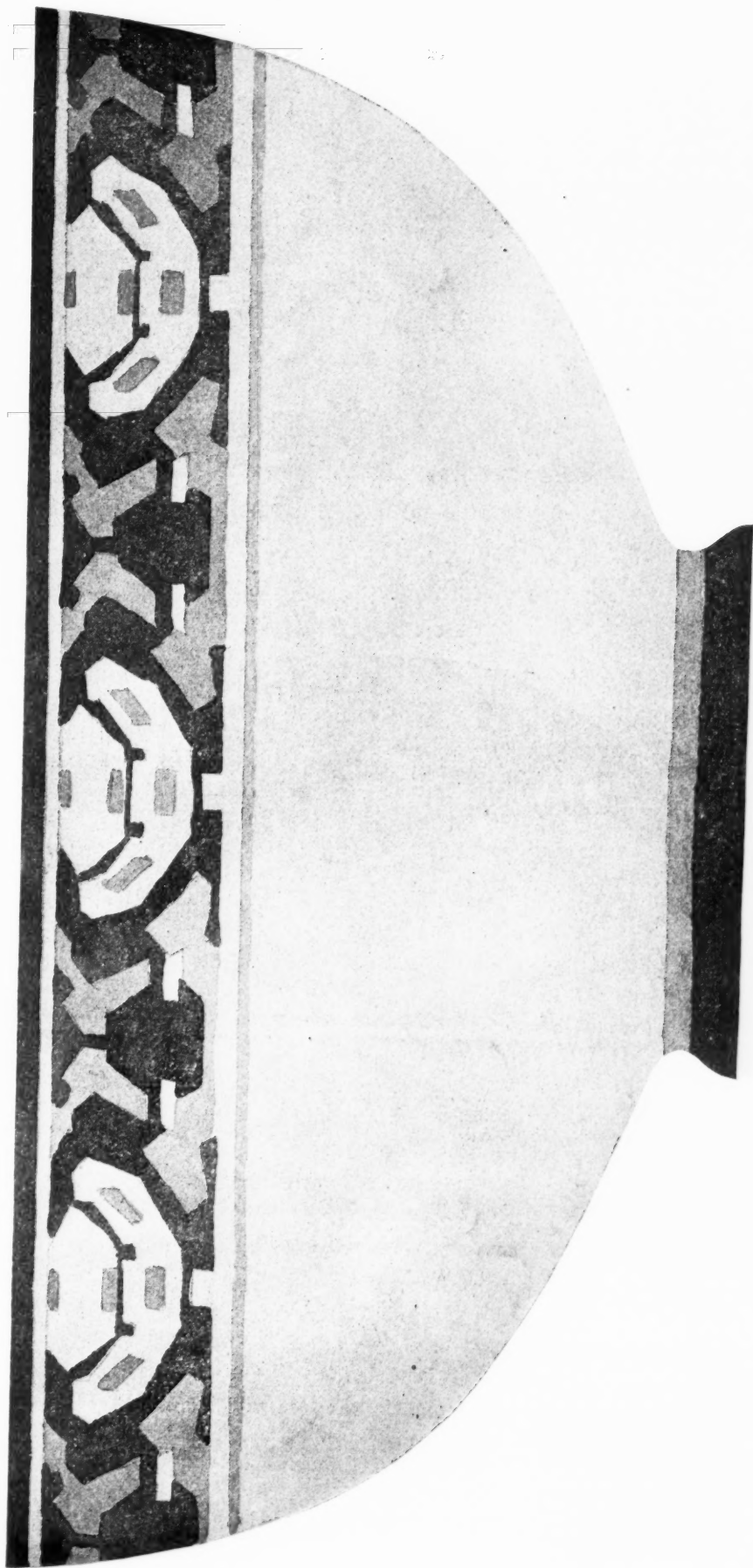
Second fire: Tint the whole, dividing the surface diagonally with Pale Pink and Russian Green. Allow the tint to cover the edges of flowers and leaves and all over stems.

Touch up leaves with Apple, Moss and Brown Green, the blossoms with any good pink thin and with flat strokes all in one direction. Do not paint over the turn overs but make them with the Pink and little Purple Back.

Centers, flat wash of Yellow, flat touch of Yellow Brown on one side, Brown Green in the middle, and stamens of Yellow Brown and Purple Black. Use same for brown stems.

Shadow leaves, flat wash of Yellow Brown thin. Some should not be touched up. Pad down any ragged edges.

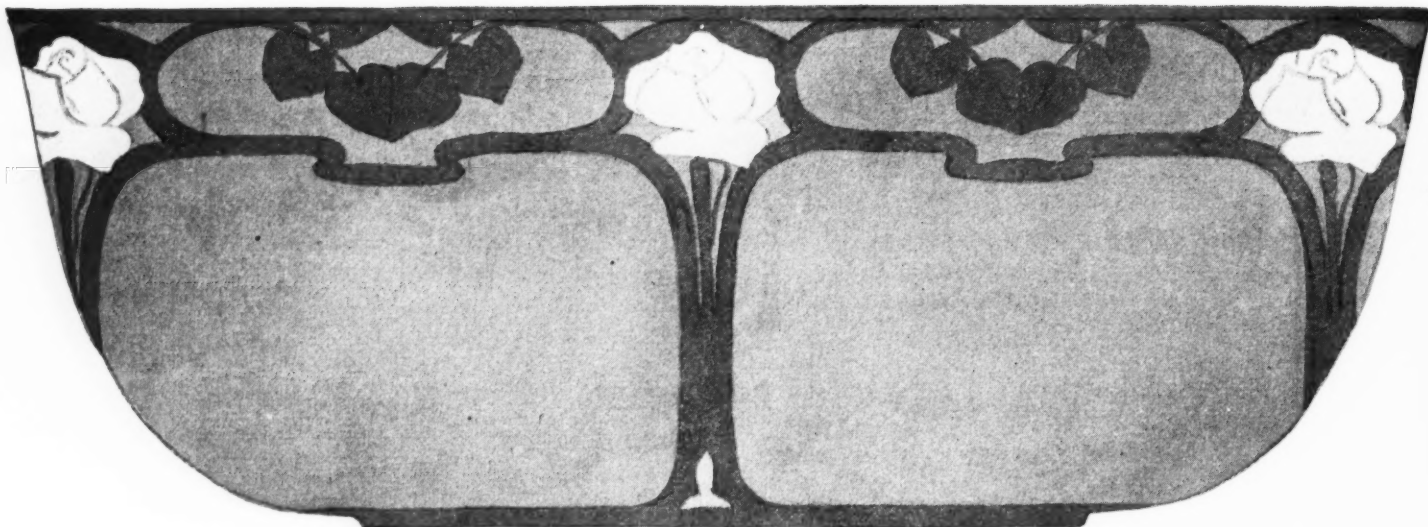
*See also treatments for wild rose in KERAMIC STUDIO, June 1906.



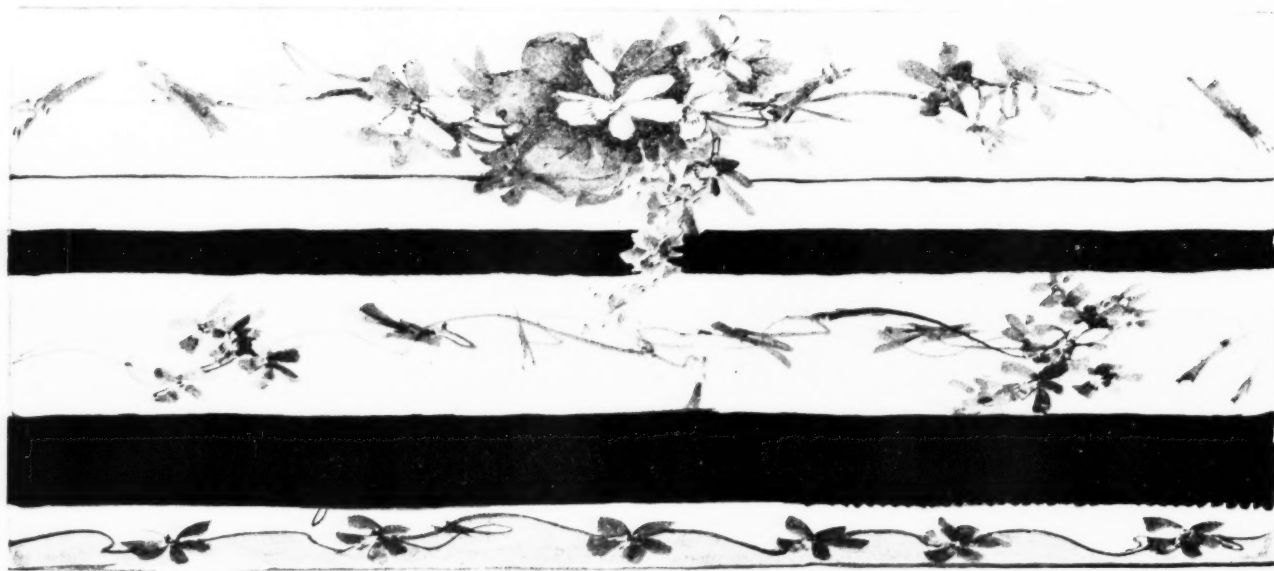
BOWL—B. H. P.*

Ground of bowl, a dark cream; background of borders and bands, Grey Green. Design in Cream and Yellow Brown.

*This design was sent in competition, and name of designer was lost.



SALAD BOWL IN OLIVE GREENS WITH A TOUCH OF VIOLET OR ROSE--OPHELIA FOLEY

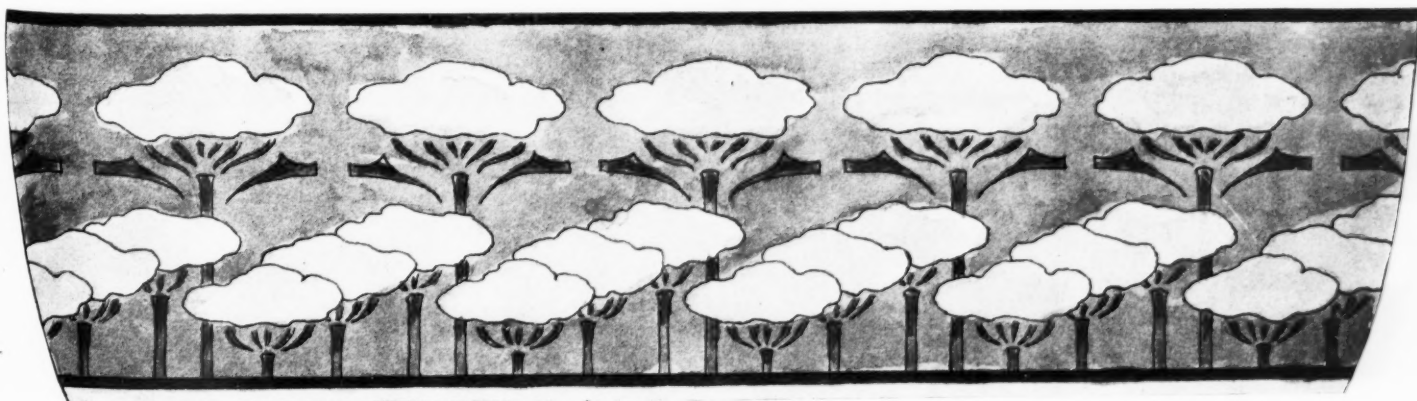


SMALL VIOLETS--ANNE SEYMOUR MUNDY

Light Violet of Gold almost entirely with Ruby and Black, a very little on the same brush, in darker tones. "Eyes and whiskers" Black and Violet. Leaves, Apple, Moss and Brown Green, shadow leaves, Violet and Greens, in flat washes.



SALAD PLATE OPHELIA FOLEY

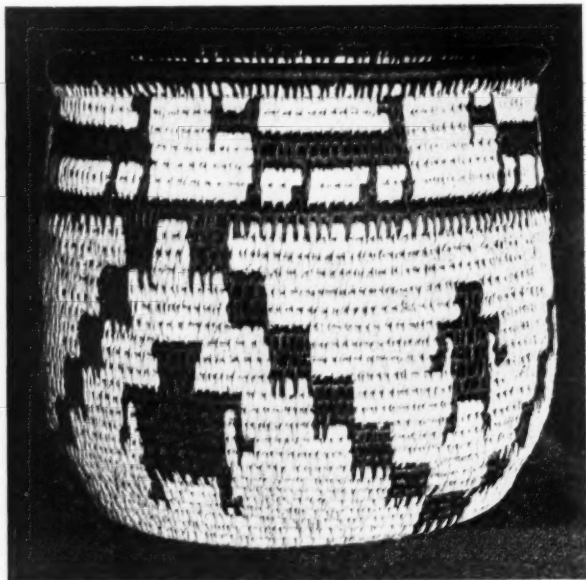


WILD CARROT BORDER IN GREENS FOR SALAD BOWL—ALICE WITTE SLOAN

THE CRAFTS

Under the management of Miss Emily Peacock, 232 East 27th Street, New York. All inquiries in regard to the various Crafts are to be sent to the above address, but will be answered in the magazine under this head.

All questions must be received before the 10th day of month preceding issue, and will be answered under "Answers to Inquiries" only. Please do not send stamped envelope for reply. The editors will answer questions only in these columns.



Illus. No. 1.

MODERN BASKETRY

Madge E. Weinland

WASTE PAPER BASKETS.

THE waste paper basket in Ill. No. 1 is black and natural raffia, woven with the bridge stitch over a filling of fifteen double strands of natural raffia. It is thirty-two rolls high and its diameter is eleven inches.

There are six figures of men, three large and three small. These are separated by a step design (see Ill. No. 1). In the border at the top of the basket there are six dogs uniformly spaced. Above and below there are single rolls of black raffia.

In Ill. No. 2, the lazy squaw stitch is used. For the filling in this basket nine double strands of natural raffia are put together. There are forty-five rolls in the side, making the basket a height of ten and one-quarter inches.

The coloring is natural and light brown raffia. Figures of light brown are inserted so that the spacing is well balanced.

There are two groups of men in the lower part of the basket with one woman between each group. In the middle of the basket, and just above the figures are four dogs and two swastikas, one dog being on either side of each group of men, with a swastika between the dogs. In the top and on each side, as is partially shown, is a group of men with the figure of a woman between each group. These figures are somewhat smaller than those in the lower part. In the top of the basket there are four figures of dogs set between the figures just below.

The basket in Ill. No. 3 is also woven with the lazy squaw stitch, though a much thicker filling is used. There are thirty-five rolls in the side, its height is ten inches and its greatest diameter eleven and one-half inches.

After weaving ten rolls of natural raffia, a large step design is inserted. The darkest parts of the design are dark red, while the medium tone is olive green. Three



Illus. No. 2.

rolls of natural raffia separate this design from the border which consists of twenty diamonds, woven with yellow ochre raffia. Alternating with these diamonds are black dashes. Above and below there are single rolls of black raffia. The basket is finished with three rolls of natural raffia.

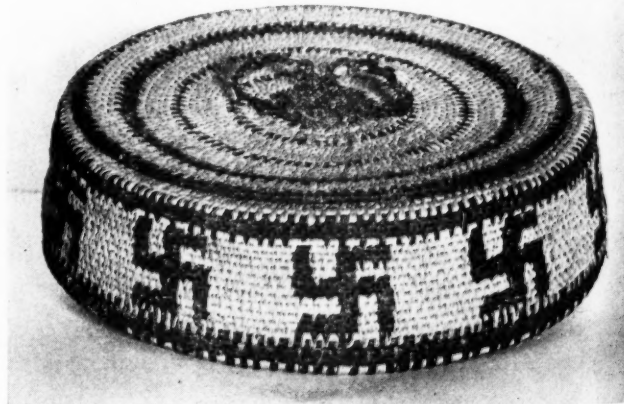
A SWASTIKA BASKET.

MATERIAL

The material necessary for making this basket consists of one bunch of yellow raffia, one bunch of black raffia, one-half pound of natural raffia and a package of No. 2 darning needles.

In connection with the weaving there are three points to be understood, namely:

1. There are three doubled strands of natural raffia used for the filling.
2. The basket is woven with the bridge stitch, except the swastikas which are woven with the lazy squaw stitch.



Illus. No. 4.



Illus. No. 3

3. When ready to change weavers, remember to place the weaver in with the filling, so that it is always ready for use at the proper time.

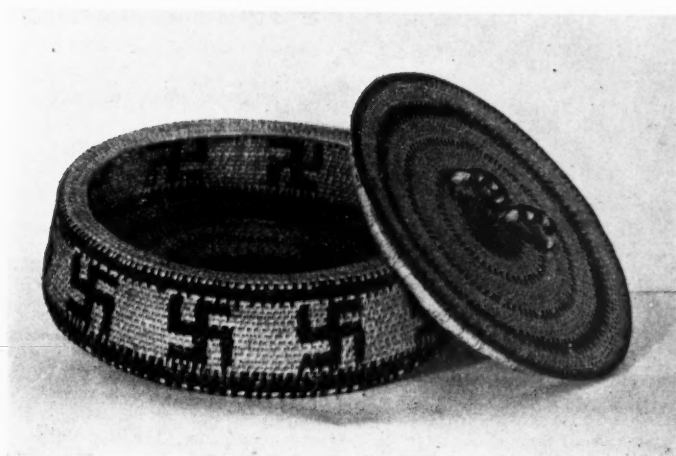
TO MAKE THE BOTTOM

Thread three No. 2 darning needles, one with black raffia, one with yellow raffia and the third with natural raffia. Weave from the center in the following order: Five rolls of yellow raffia, one roll of black, five rolls of natural, one roll of black, five rolls of natural, one roll of black, five rolls of natural, one roll of black, one roll of yellow, one roll of black and finish with seven rolls of natural. This completes the bottom, making altogether thirty three rolls.

TO MAKE THE SIDE STRAIGHT

In order to keep the sides straight while weaving, hold each roll above the roll previously woven until the side is completed. With the black, yellow and natural raffia, weave as follows:

One roll of black raffia, one roll of yellow, one roll of black and one roll of natural raffia. The fifth roll of the side is woven with the natural raffia, but is broken with black in the following manner: After weaving the fourth roll around to the starting point, weave one inch more of natural raffia, then twice the width of the roll in black, twice the width of the roll in natural and six times the



Illus. No. 5

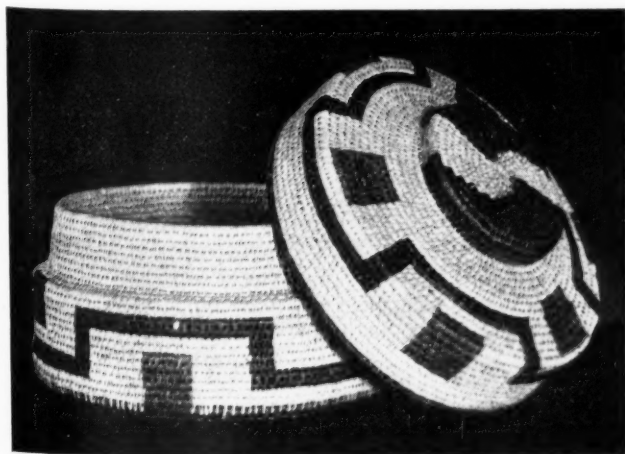
width of the roll in black. This forms the base or foundation of the first swastika. Complete the fifth roll, inserting the bases of nine more similar swastikas, spaced at equal distances apart, with natural raffia between them. Weave the sixth roll the same as the fifth.

The seventh and eighth rolls are similar to the foregoing, excepting that the second weaving of black is the same as the first, that is, the width of two rolls. (See Ill. No. 4).

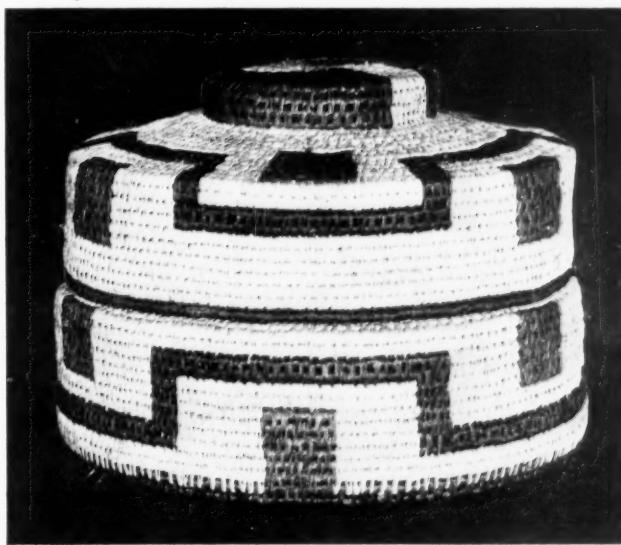
The ninth and tenth rolls form the centers of the swastikas and the weaving of black is carried the full length of each figure. The eleventh, twelfth, thirteenth and fourteenth rolls are the same as the eighth, seventh, six and fifth, excepting that the figure is reversed, as is shown in the illustration. Complete the side by weaving one roll of natural, one roll of black, one roll of yellow and one roll of black. Now weave four more rolls of the natural raffia and from the last weaving of black, turn the rolls directly toward the center. This forms a rest for the cover.

TO MAKE THE COVER.

Make the cover somewhat similar to the bottom of the basket and of such size that it is two rolls larger all around than the opening into the basket. Weave a separate roll, with a filling of fifteen doubled strands, to form a ring that will pass through the top of the basket. Attach this to the inside of the cover to hold it in place.



Illus. No. 6



Illus. No. 7

Select three doubled strands of natural raffia for filling and with black raffia make a handle four and one-half inches long, using the button-hole stitch. Sew this, at the center and each end, to the cover with black raffia. (See illustration.)

Illustration No. 7 shows a basket woven over a small cotton rope with the "Bridge Stitch." The design, simple and effective, can be easily made by carefully following the photograph. The squares of bright orange raffia are separated by vertical and horizontal black lines, against a ground of natural raffia. The coloring, in the top of the cover, is orange, outlined with black and natural raffia.

Rope filling will be found very satisfactory, as it makes a firm basket.

NOTE—The bridge stitch referred to above is made as follows: With a weaver of ordinary size and any filling desired, weave by winding toward you nine times around the filler, covering about one inch. Now fold the work so that the beginning and the end meet and fasten firmly. For further weaving wind three times around the filling and insert the needle in the hole in the center. Continue weaving in this manner around to the beginning of the roll. From this point to the end of the work wind three times around and pass the needle under the roll previously made.

ART IN PEWTER TECHNICAL PART (CONTINUED)

Jules Brateau

Detaching the whole, we draw out the model and we obtain five pieces to be treated as follows:

The mould is reduced regularly and throughout to a thickness of barely one centimeter. I give this dimension from experience, as adapted to an object like this goblet, thirteen inches high, nine and one-half at the top, and five and one-half at the base.

On the line of juncture of these three sections must be made a plaster wall, or partition (Fig. 7, 10, 11 B), a kind of border of about six millimeters over and above the thickness of the mould, following closely the line of the sides having the bench or section marks, which will be removed later. As soon as these borders are exactly fitted to the several pieces of the mould, one should be able to assemble them as easily as when they were joined together on the plaster model.

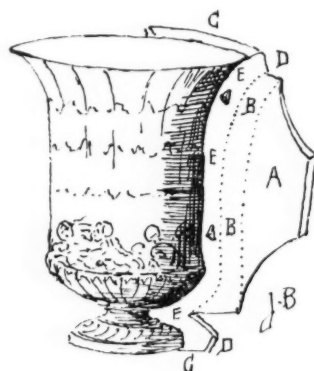


Fig. 10.—Goblet with piece of plaster mould. A, neck; B, partition; C, plane surface; D, slope; E, thickness of mould.

Again, the workman takes two of the sections in order (since they must fit exactly), and builds above each of the two adjacent partitions, an extension in plaster (Figs. 10, 11, 12, 13, A A A), about four centimeters in height; quite wide at the point of contact and growing narrower as it rises. This extension is called the neck or funnel.

At the center of each piece a square handle is attached. This is wider at the base than at the top, in order that the

pieces may be easily handled when they are made of copper. (Fig. 9, 11, 12, 13, E E E).

Let us now take the *shapes*! One of them is called the *core* the other the *cap*. We regulate them to a thickness not exceeding one centimeter. On the core, which is here the smaller of the two shapes, we fit a cylindrical body of plaster, which assumes the precise form of the interior of the vase. This body is obtained by cutting from a mass of plaster, or by making a rough-casting (Fig. 12).

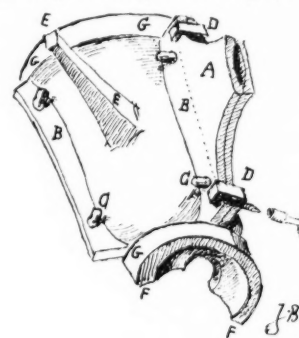


Fig. 11—A, necks put together; B B, wall or partition; C, bolts; D D, clamps in place; E, handle; F F, plane part; G G, inclined part.

The section of the core of the foot being separated from the section of the core of the vase proper, we attach it on the shape, or the cap, well centered and firm. (Fig. 12 C).

These indispensable preparations build the core, allow the object to be hollow, and assure the proper thickness to the pewter which is to be melted.

The plaster mould being thus finished is allowed to dry thoroughly; then, a very even coating of modeling wax, from one-half to one millimeter thick, is applied at the junction of the three pieces (that is to say, the inside of the partitions), on the inclined parts of the shapes of the core and of the cap, and upon the flat surfaces of the top and the bottom.

The pattern maker, to insure the accuracy of his work, needs a slight excess of metal beyond the lines of division and friction, and he could not produce a good mould, if he had not this resource at his command, in cases when the copper varies slightly at the casting. Moulds may also be made perfectly smooth and plain, which need no modeling.

To produce these latter it is no less necessary to make a model in plaster, wood, or other hard substance, so as to allow the caster in copper, or iron, to reproduce in his own way, which differs from the way of the caster in pewter.

THE CASTING OF MOULDS IN IRON, COPPER, ETC.

We have seen that the plaster mould is finished, but to be practically useful, it must be reproduced in copper, iron, or even in steel.

If the model have a certain artistic value and the proofs be not destined for the market in great numbers, it is cast in brass.

This model is taken to the foundry, where highly skilled artisans mould it in sand; beating and cutting it, and dividing it into several pieces which they fit together, as the maker of the model did with his plaster.

These artisans assemble their separate pieces according to the necessities of the casting, into frames, (Figure 14, A A A) which they completely fill with sand well beaten and closely packed (Figure 14, B B). Gates are carefully made and located in order to lead the metal to a more important canal which, itself widening, ends in a sort of funnel (Fig. 14, C) into which the metal flows, when the

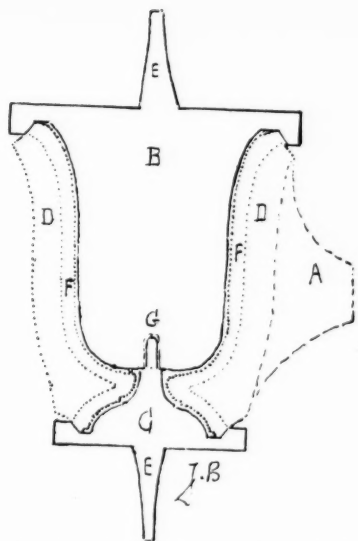


Fig. 12.—A, neck; B, large core; C, core of the cap; DD, partition; EE, stem; FF, thickness of mould; G, center-pin of the cores.

sand of the frame is very dry, well cleansed and, above all, well smoked.

The founder, having placed the frame in an inclined position, firmly grasps the crucible with the tongs, brings its edge, or spout, near the funnel of the frame and pours out the molten metal constantly and evenly, until it reaches the opening of the mold. The operation is now complete.

Having allowed the mass to cool for several hours, the founder breaks open the sand-mould and removes the casting, which, if successful, appears covered with an intricate pattern of channels (Figure 15, B B). These gates are removed with saw or file and the casting is left clean (Figure 15, A A A).

Our five pieces are obtained as well as as the core. The core is much the thickest and this portion the judicious founder will feed by wider gates in order to provide it with the necessary metal.

THE ADJUSTMENT OF HARD METAL MOULDS

The fitter finishes the mould. He begins by cleaning the separate pieces in diluted nitric acid. He rinses and

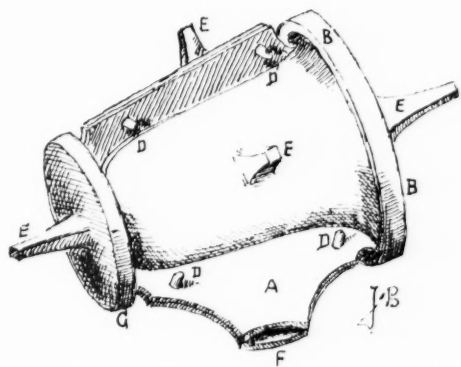


Fig. 13.—A, neck; B B, shape of large core; C, cap, core of the foot; D D D D, bolts; E E E, stems or handles; F, funnel of the neck.

dries them, and files away the surplus metal which the founder removed roughly. The fitter then examines minutely the three sections to assure himself that during casting, or cooling, they have not changed in form.

After annealing his pieces, if it be necessary and possible, he can rectify them with the hammer, striking them on the outside and resting the sections upon lead, or wood. He shapes them at the points which, in his judgment, require attention; his work with the file having simply removed superfluous metal.

At this point, we recognize the usefulness of the surplus metal allowed at the joints; for, if the mould be not absolutely impervious, the pewter floods in all directions and no complete proof can be obtained.

The fitter files, or planes, the six sections of the walls which may be joined perfectly. He measures by compass the upper and the lower openings of the model, so that those of the casting may correspond exactly. As the benchmarks no longer exist, he begins by joining his three sections exactly and holding them together with steel clamps so as to form a single piece (Figure 16, 11 D D).

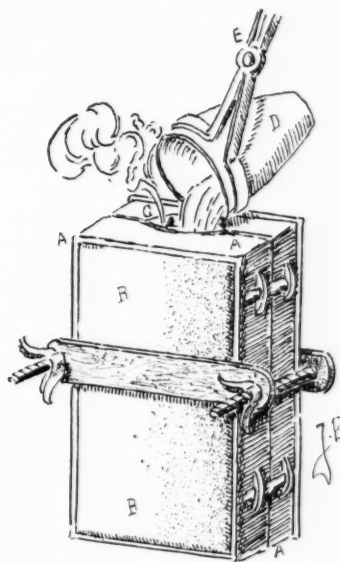


Fig. 14.—A, frame; B, beaten sand; C, funnel; D, crucible; E, pincers.

At the top and the bottom, he perforates the metal walls surrounding each section, so as to insert a dowel; a kind of round-headed clamp which will project but slightly on the inside of the joints of the sections thus united. He returns to the two pieces containing the neck and cuts with the graving-tool in each flat surface of the neck a canal (Figure 17, A A A) which he expands into a funnel at the outside of the sections, diminishes progressively toward the inside, in order to lead the metal into the mould. But close to the inside edge of the mould, the depth of the channel must be lessened, to allow the flow of metal to be broken in the canal when the casting is completed. This important point obtained, we can now easily handle the mould which has been thus made firm.

We next place it on the lathe and center it with pre-

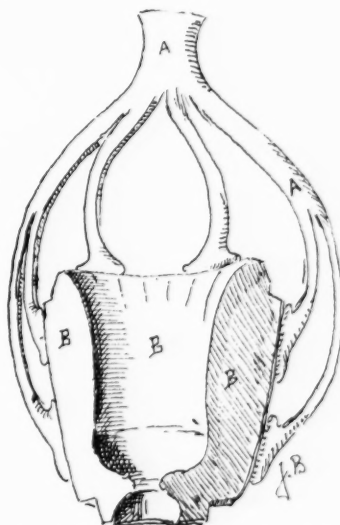


Fig. 15.—A A, channels; B B B, piece of mould cast in copper.

cision, reducing the plane surface (Figure 11, F F) with the chisel or other tool to the size of the model. We also turn on the lathe the inclined portion (Figure 11, G G), and we may attempt to produce the lines of modeling which, inside the mould, give the profile of the vase; but this last must be done with great discretion. If the

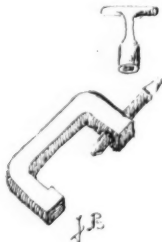


Fig. 16—Steel clamps.

tool can penetrate further than the opening, the shape may be "beaten up" by slight taps; the tool being held firmly and care being taken not to injure the design. Then, the mould is turned end for end upon the lathe, and the process is renewed.

The cores are also placed upon the lathe, provided that they are successful castings, without air-bubbles and holes. The shape of the top and the cap of the base are hollowed to receive the ends of the mould, fitting over the flat and the inclined portions (Figure 12).

By passing the tool over the very smooth core which must go inside the vase (Figure 12), the workman removes enough material to create space sufficient for the pewter to flow in and form an object of such thickness as will assure a due amount of resistance without excessive weight.

But the goblet must not be too thin, as the parts in bold relief must be held in shape by the solidity of the background.

The cap of the base which holds the core of the foot is treated like the core of the body of the goblet, but, in the upper part of the cap, a clamp must be inserted; a kind of dowel which will penetrate it. This will support the two cores when they shall have been put into their respective places and cover the pieces of the mould (Figure 12, G).

The caps of the cores must be exactly fitted to the parts which they cover and support, but yet they must be given a degree of freedom to avoid unnecessary friction (Figure 13). The expansion of the metal from the heat to

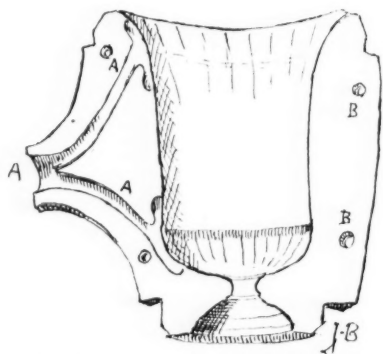


Fig. 17—A A, canal or neck; B B, holes for bolts.

which they must be subjected, demands this precaution, in order that the object may be easily and safely removed from the mould.

The assembling of the mould of the tray mentioned at the beginning of this article, offers less difficulty by reason of its form. It may be effected by turning on the lathe.

With a light stroke of his tool, the turner will sharpen the mouldings, if there are any, in the design of the tray. He will groove the outside edge, called the margin. (See Figure 1, B), to the depth of a half centimeter. He does this so that the counterpart may fit in, or over, this groove and that the two parts of the mould may turn easily on each other.

To stop this rotary motion and to keep the two parts exactly in their place, a notch should be made in one on the outer edge of the margin and near the neck (Fig. 18, A); while in the corresponding part of the other piece spirally or

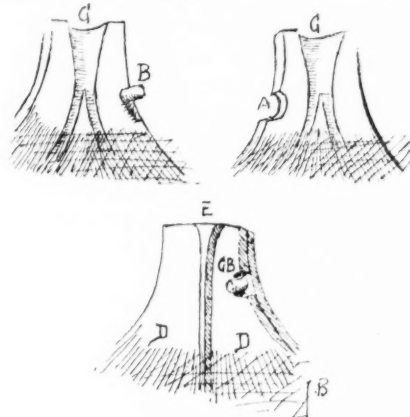


Fig. 18—A, notch; B, dowel; G G, neck; GB, dowel in notch; D, mould put together; E, brace.

ordinarily riveted, a dowel (Fig. 18, B) is fixed, which abuts upon the notch and thus fulfils the desired end.

As in the case of the core of the goblet, the turner must remove with a proper tool a certain quantity of copper in order to make room for the pewter which is to be cast. In the present case, the counterpart of the tray serves the purpose of core (Figure 6 I), and it is cut away, as much as is needed to give the proper thickness to the pewter proof.

The measure of the necessary thickness can be gained by repeatedly pouring into the mould a readily fusible alloy, half tin, half lead, admitted to both parts of the mould, which is perfectly closed, heated and lightly covered with a kind of coating, or glaze, adapted for use upon inside surfaces. Finally, if judged necessary for the success of the piece, a further amount of copper may be removed from the core.

Usually, the mechanic to whom this work is entrusted, is a skilled workman who specializes in making moulds for pewter, and who must also understand foundry processes, as otherwise he would be but the unintelligent adjunct of his tools.

Thus the mechanic and the founder work together, each profiting by the observations and experiences of the other. In this way they produce excellent moulds and assure the success of the objects to be made from them.

(TO BE CONTINUED)

ANSWERS TO INQUIRIES

COPPER.—If you cannot find copper rivets the proper size for your work get copper wire and make the rivets. Silver solder is used for copper though you can use a soft solder also. Iron wire for building work while soldering comes by the pound and also on the spool, numbers 22 and 28 are the most useful.

M. B.—You can use cattail leaves for a basket, but the leaves must be gathered in August when the tips are beginning to dry. Dry them on a floor or shelf, where the sunlight does not come and turn them occasionally so that they will dry evenly. When perfectly dry wrap in a damp cloth to make pliable. Sweet grass is more easily gathered and dried.

E. B.—Colors for printing on thin materials can be bought by the ounce.

mix with a little gum tragacanth, and water. To launder printed materials, first shake out all dust then soak for an hour in a strong solution of salt. Wash with a white soap, and do not boil.

LEATHER.—F. W. Devoe & Co., Fulton and William streets, sell a book on leather by Marguerite Charles. You will find the information you want in this. They also keep tools for leather. All work on leather is generally finished before the article is made up.

ANSWERS TO CORRESPONDENTS

K. S. C.—See recipe for making gold for china from gold leaf, *KERAMIC STUDIO*, December 1905.

A.P.K.—A gold coin can be used to make the gold for china decoration. The powder from a coin will be darker than that from ribbon gold and will not need the flux.

A. J. M.—Rose lustre will easily turn out bluish in firing. It is a sensitive lustre and should be fired just at a certain point. You probably fire it too hard, or it may be affected by other lustres in the kiln.

S. M. J.—Burnish silver can be bought in powder from any of our large dealers. Use the same as powder gold, an underpainting of liquid bright silver will help and lessen expense. It should not be fired on the same piece with pinks. It would be well if it could be fired entirely apart from the gold colors, carmine, rose, etc.

W. S. W.—It is difficult to say what heat you reach in your overglaze kiln, it may vary by 100° F. or more. China decorators judge of the point of firing from the color in the kiln. This is guess work and it is impossible with guess work to always stop at the same point. Fortunately overglaze colors will not be, as a rule, much injured by quite marked variations of temperature, and they do not all require the same heat. Liquid bright gold will fire as low as 1364° F. (cone 017). Other colors need more, all the way from 1472° F. (cone 015) to 1580° F. (cone 013) or perhaps more; it should also depend on the kind of ware used, whether hard French china or soft English china or Belleek. China decorators would do better firing if they used pyrometric cones, so that, after a little experimenting, they would know exactly where to stop. These cones are sold by Prof. Ed. Orton, Jr., of the Ohio University, Columbus, O., and cost one cent a piece.

S. J. A tankard with dragon handles should be decorated with a conventional design, using perhaps some of the dragon's parts conventionalised. But if you wish to have a naturalistic decoration, we would suggest some of the grape studies published in *Keramic Studio*, for instance in November, 1907 or January, 1907.

R. C. E.—The set of tea plates with gold bands and initial letters should be worth \$10 to \$12 a dozen for the work, adding to this the cost of white china and gold. The salad dish should be worth altogether \$5 to \$6.

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STUDIO NOTE

Mr. Franz A. Bischoff has permanently located in South Pasadena, California, where he has opened his art school and gallery.

APPRECIATIVE LETTERS

Owensboro, Ky.

Since words of praise are always gratifying, let me express my appreciation for your earnest effort to lead us toward the truly beautiful in our work. May success crown your endeavor. Sincerely yours,

Ophelia Foley



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SHOOTING STAR DESIGN IN GOLD ON WHITE—ELIZABETH DELONG



HIGGINS'

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ETERNAL WRITING INK
ENGROSSING INK
TAURINE MUCILAGE
PHOTO MOUNTER
DRAWING BOARD PASTE
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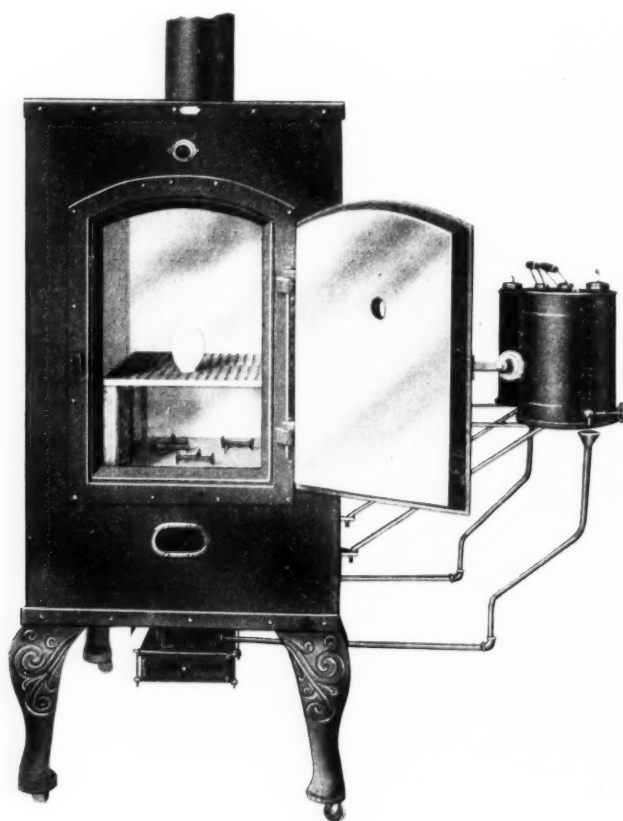
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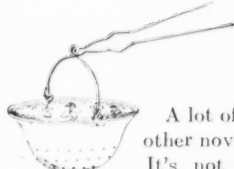
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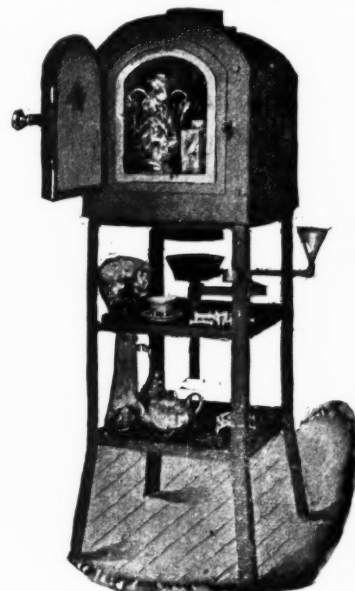
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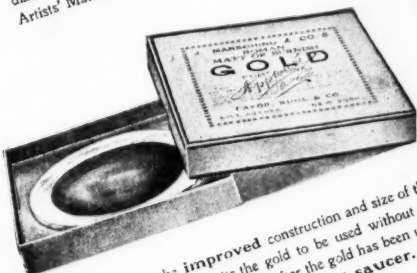
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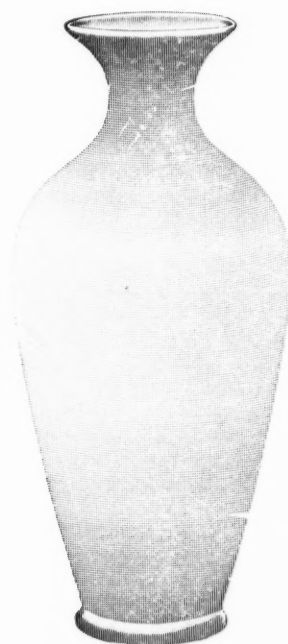
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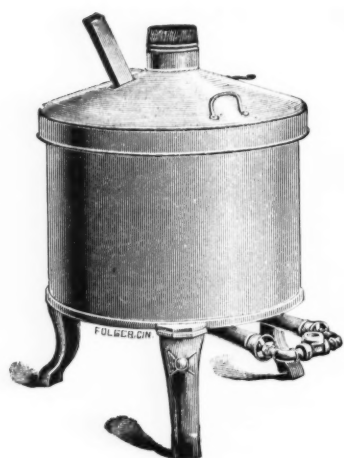
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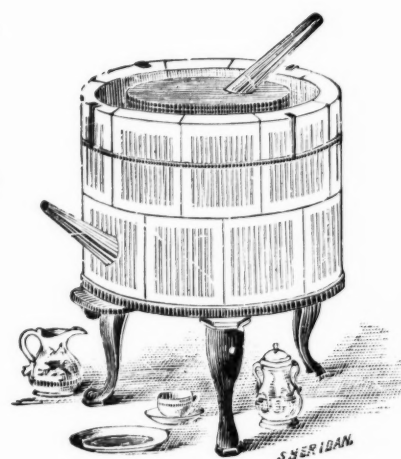
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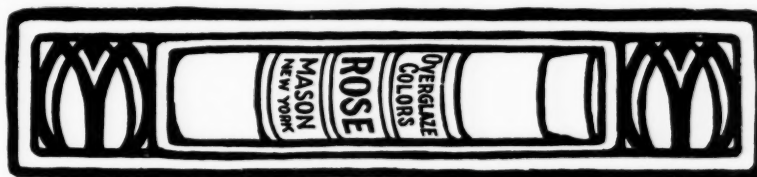
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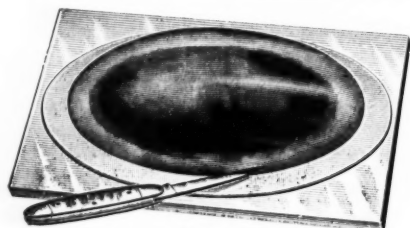
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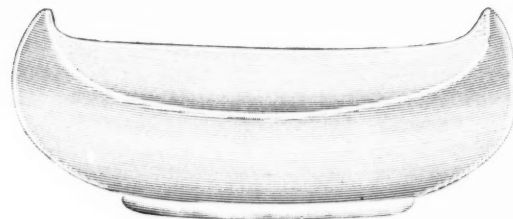
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